

CONSTRUCTION DRAWINGS FOR

DEADMAN'S BASIN DIVERSION DAM AND HEADGATE REPLACEMENT PROJECT

DEADMAN'S BASIN WATER USERS ASSOCIATION
WHEATLAND COUNTY, MONTANA

MAY 2014

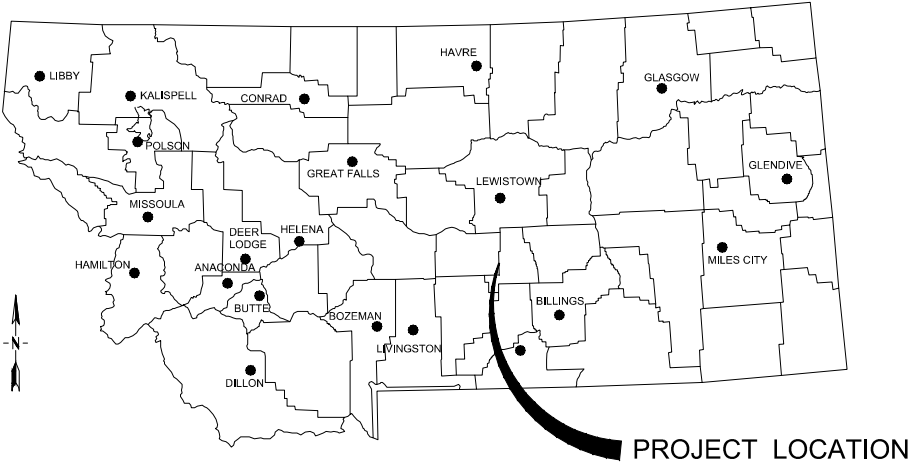
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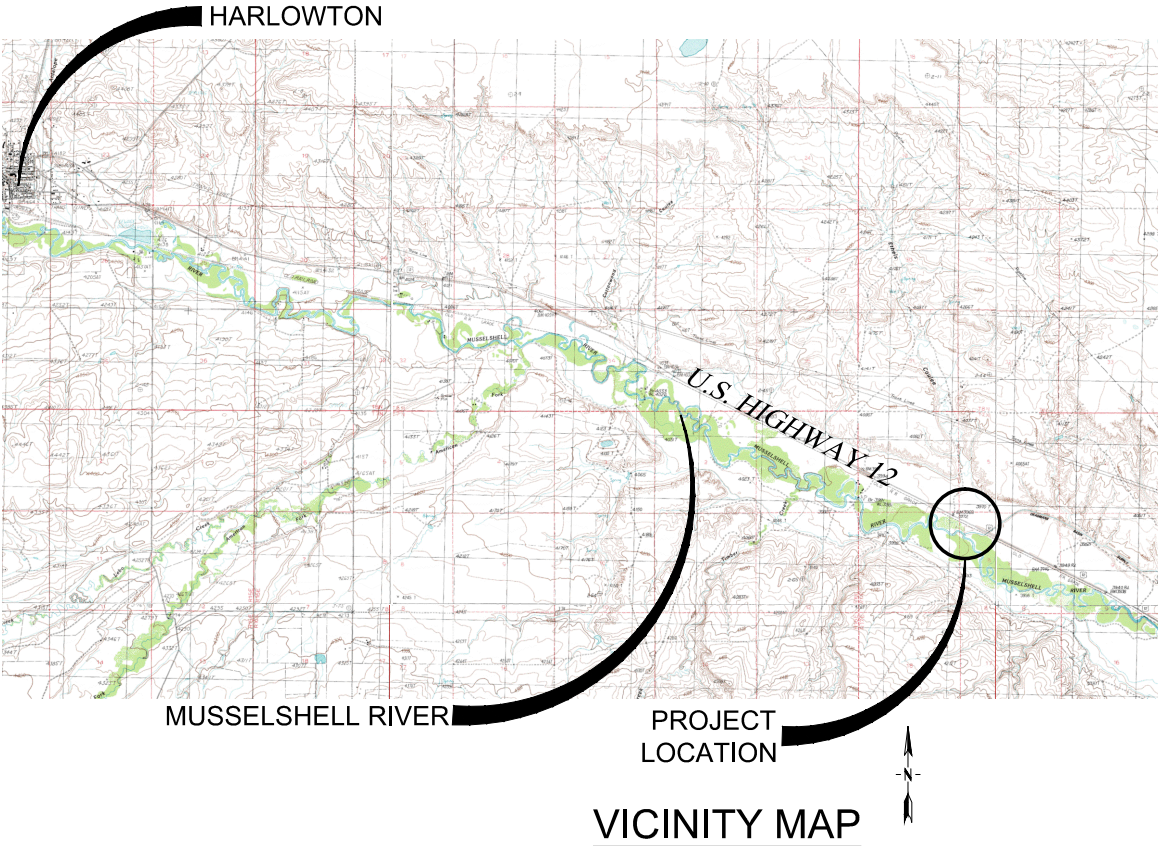
PREPARED BY:



Engineers
Surveyors
Scientists
Planners



LOCATION MAP
NO SCALE



VICINITY MAP

APPROVED BY: _____
JOSEPH SMITH, P.E., CFM, LSIT
Project Manager

APPROVED BY: _____
DAN DEUTSCH, P.E.
DNRC STATE WATER PROJECTS BUREAU

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QUALITY ASSURANCE
Project Manager
Office Manager or Q.A. Coordinator
Peer Reviewer
Q.A. Approval Date
Q.A. Project No.

90% DESIGN REVIEW DRAWINGS

SET NO. _____
MMI PROJECT NO. 1447.035

SHEET INDEX		
SHEET No.	DRAWING No.	SHEET TITLE
		COVER
1	C-1	SITE PLAN
2	C-2	DEMOLITION PLAN
3	C-3	DIVERSION DAM PLAN
4	C-4	DIVERSION DAM DETAILS AND SECTIONS
5	C-5	HEADGATE PLAN AND SECTIONS
6	C-6	SUBGRADE GRADING PLAN
7	S-1	STRUCTURAL NOTES
8	S-2	STRUCTURAL PLAN
9	S-3	STRUCTURAL SECTIONS
10	S-4	STRUCTURAL SECTIONS AND DETAILS
11	S-5	STRUCTURAL DETAILS

LOCATION DESCRIPTION

FROM THE INTERSECTION OF U.S. HIGHWAY 12 AND U.S. HIGHWAY 191, HEAD EAST ON U.S. HIGHWAY 12. TRAVEL APPROXIMATELY 9 MILES. FROM SHAWMUT, HEAD NORTHWEST ON U.S. HIGHWAY 12 FOR APPROXIMATELY 6 MILES. THE DIVERSION DAM IS LOCATED JUST SOUTH OF THE HIGHWAY.

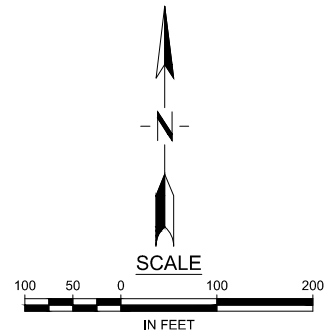
LATITUDE: 46° 13' 06.33" N
LONGITUDE: 109° 37' 55.34" W

GENERAL ABBREVIATIONS

- CONC.
- CP
- CPP
- DIA.
- ELEV.
- IE
- IN.
- LF
- MIN
- NIC
- NTS
- OPC
- SCH
- STA
- TYP.
- CONCRETE
- CONTROL POINT
- CORRUGATED PLASTIC PIPE
- DIAMETER
- ELEVATION
- INVERT ELEVATION
- INCH
- LINEAR FOOT
- MINIMUM
- NOT IN CONTRACT
- NOT TO SCALE
- ORANGE PLASTIC CAP
- SCHEDULE
- STATION
- TYPICAL



CONTROL POINT TABLE				
POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
22	778418.4640	1935220.4460	3970.71	CP22
23	778539.1490	1936594.0470	3963.41	CP23



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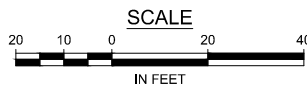
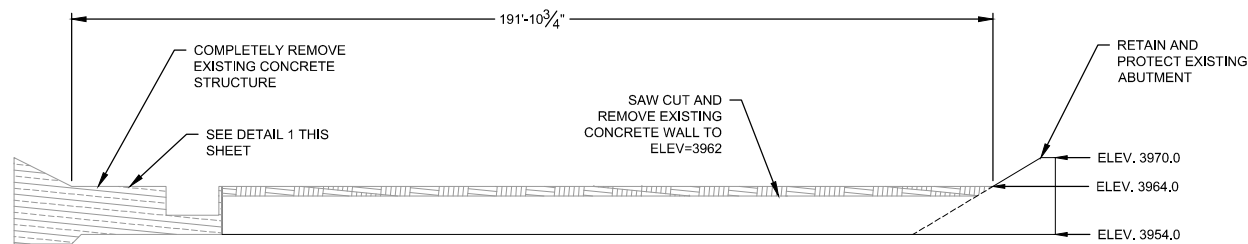
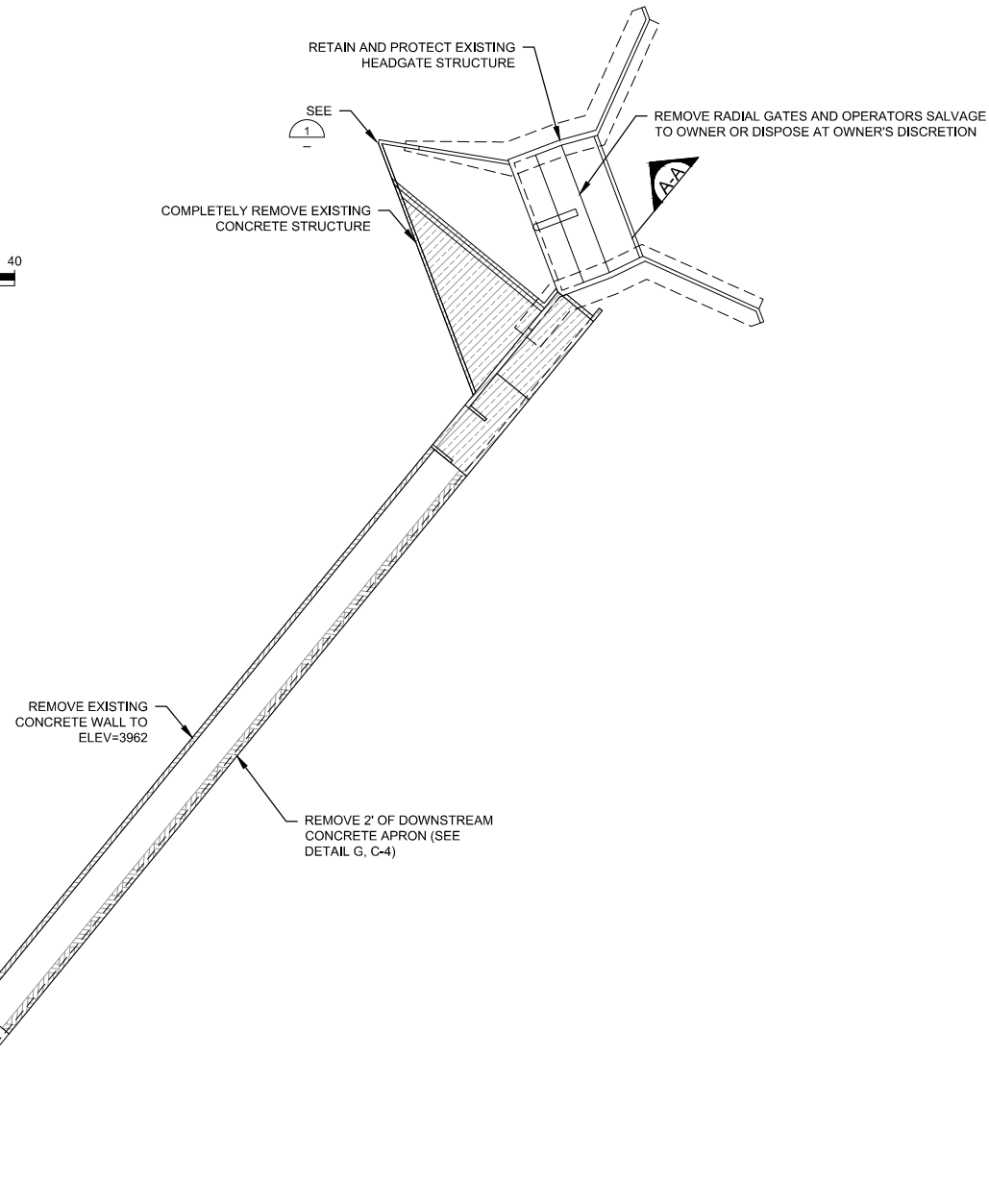
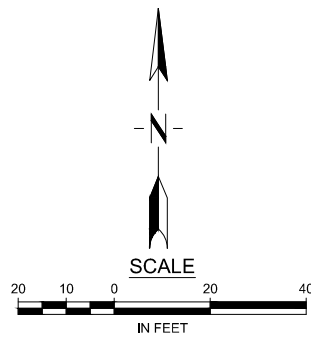
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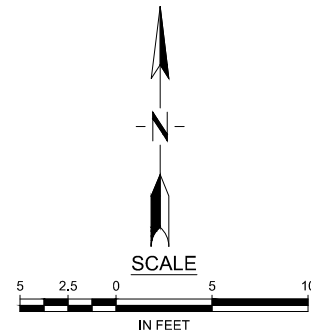
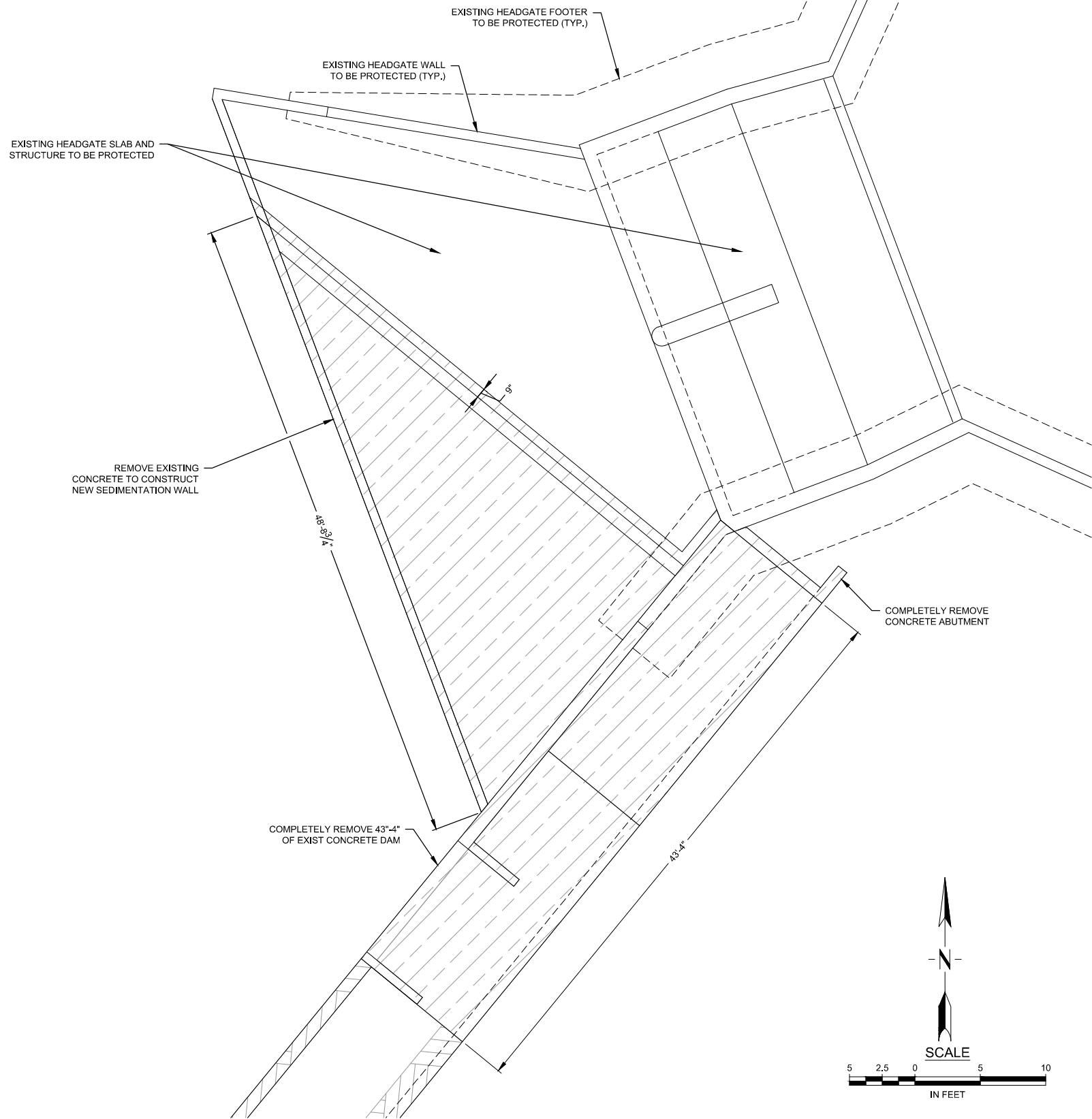
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DATE: 05/2014
Q.C. REVIEW BY: ***
DATE: ***

WHEATLAND COUNTY	DEADMAN'S BASIN DIVERSION DAM	MONTANA
	SITE PLAN	

PROJECT NUMBER 1447.035
SHEET NUMBER 1
DRAWING NUMBER C-1



DIVERSION DAM CROSS SECTION



EXPANDED DEMOLITION PLAN

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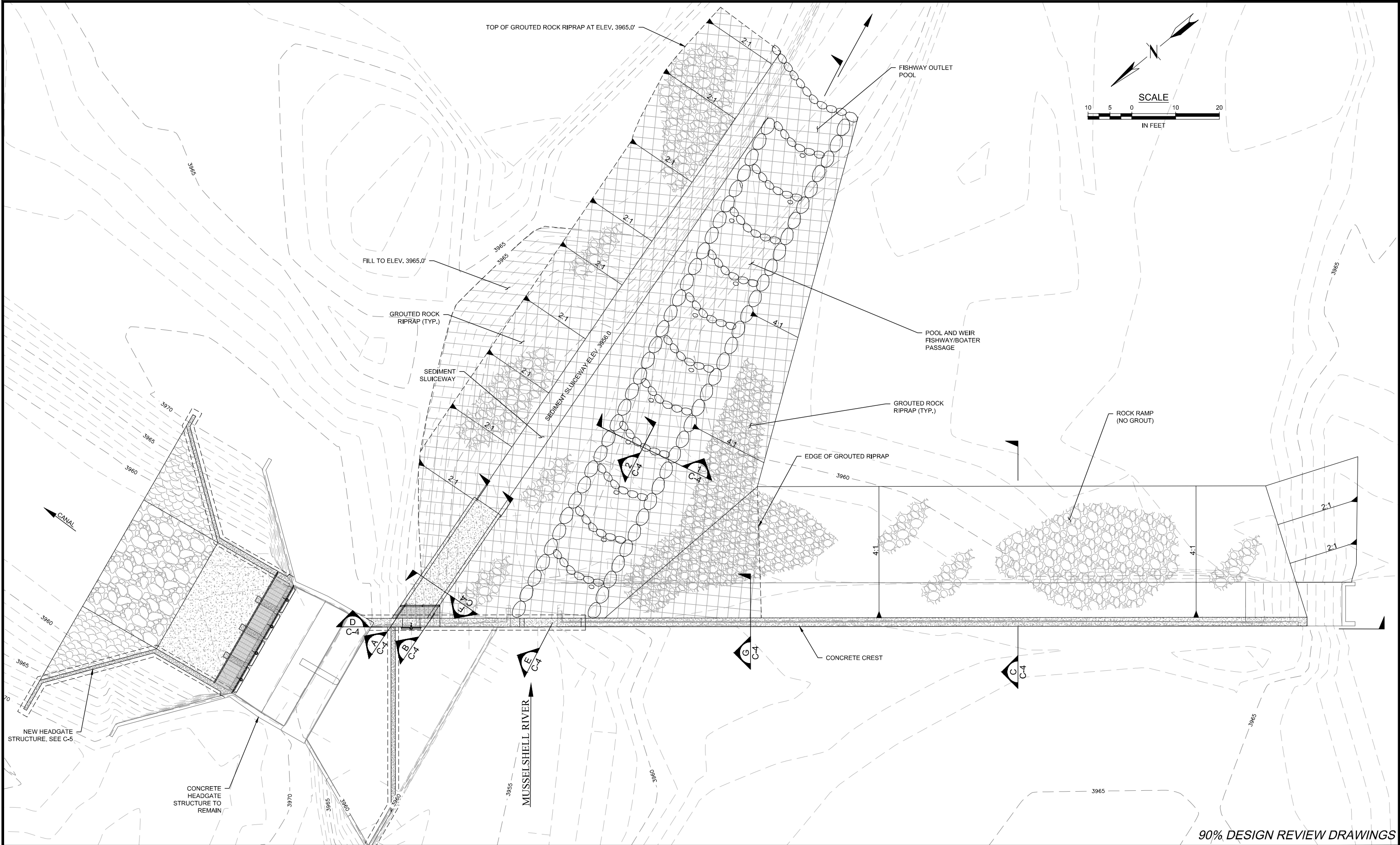
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WHEATLAND COUNTY	DEADMAN'S BASIN DIVERSION DAM	MONTANA
DEMOLITION PLAN		

PROJECT NUMBER 1447.035
SHEET NUMBER 2
DRAWING NUMBER C-2

M:\1447\035\ACAD\SHETS\DEMO PLAN.DWG PLOTTED BY: CHRISTOPHER HAWKINS ON May/29/2014



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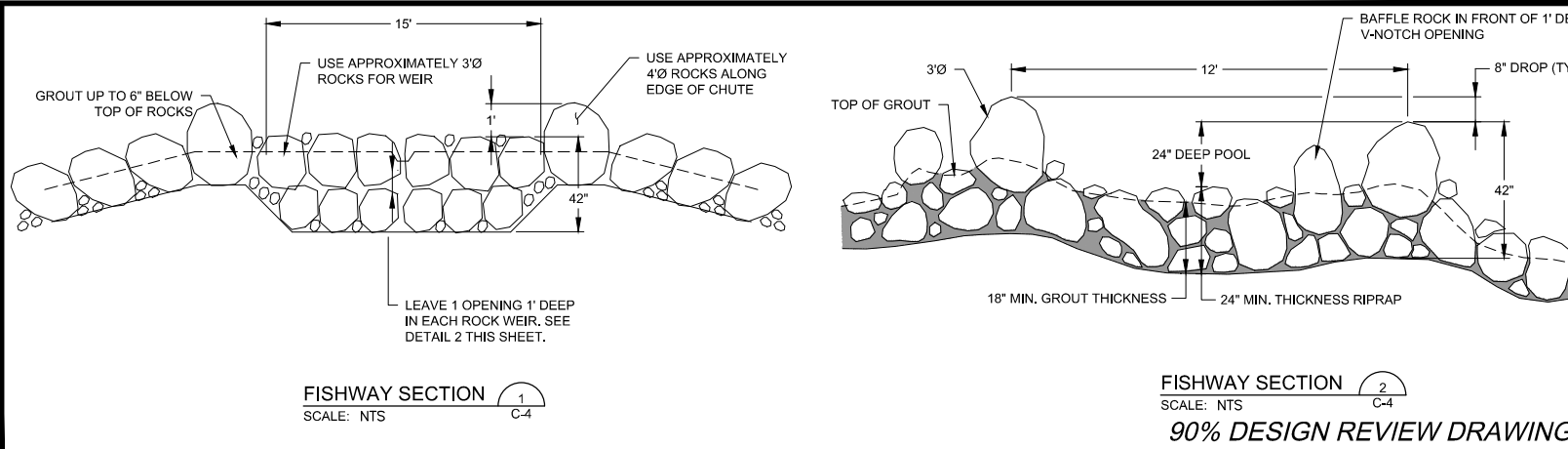
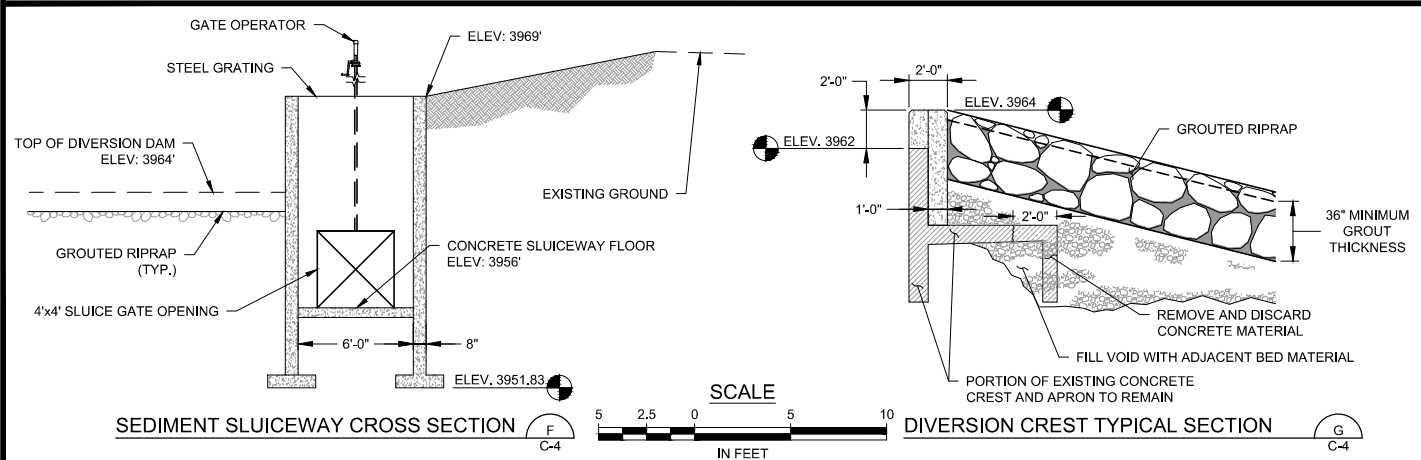
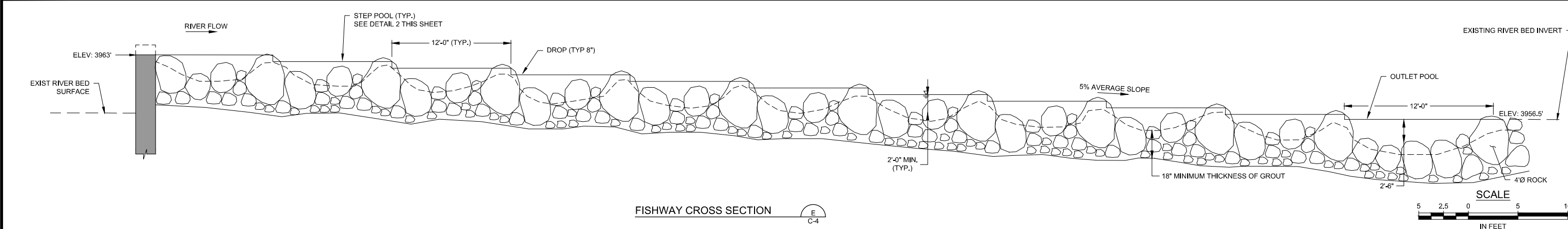
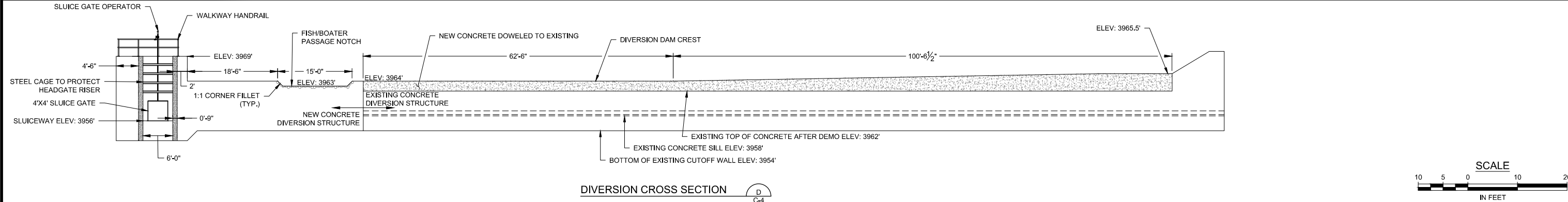
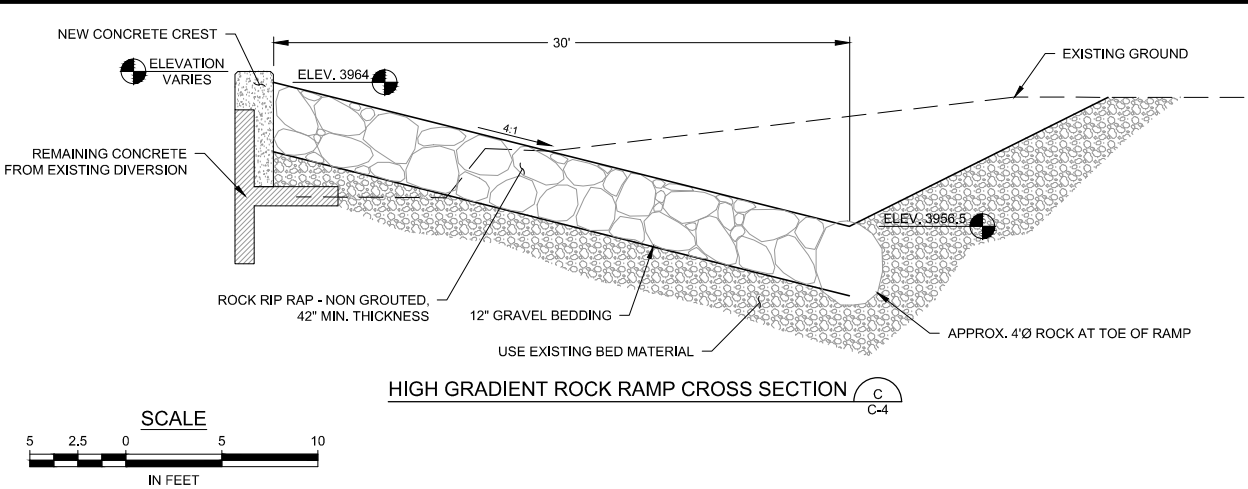
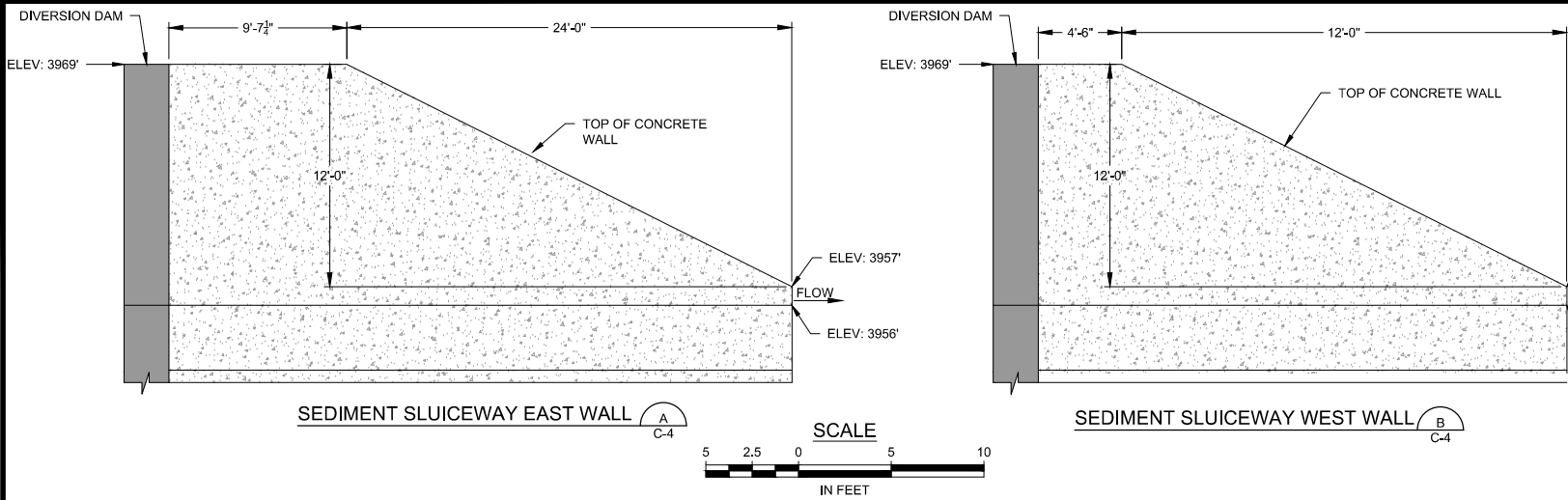
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WHEATLAND COUNTY	DEADMAN'S BASIN DIVERSION DAM	MONTANA
	DIVERSION DAM PLAN	

PROJECT NUMBER 1447.035
SHEET NUMBER 3
DRAWING NUMBER C-3



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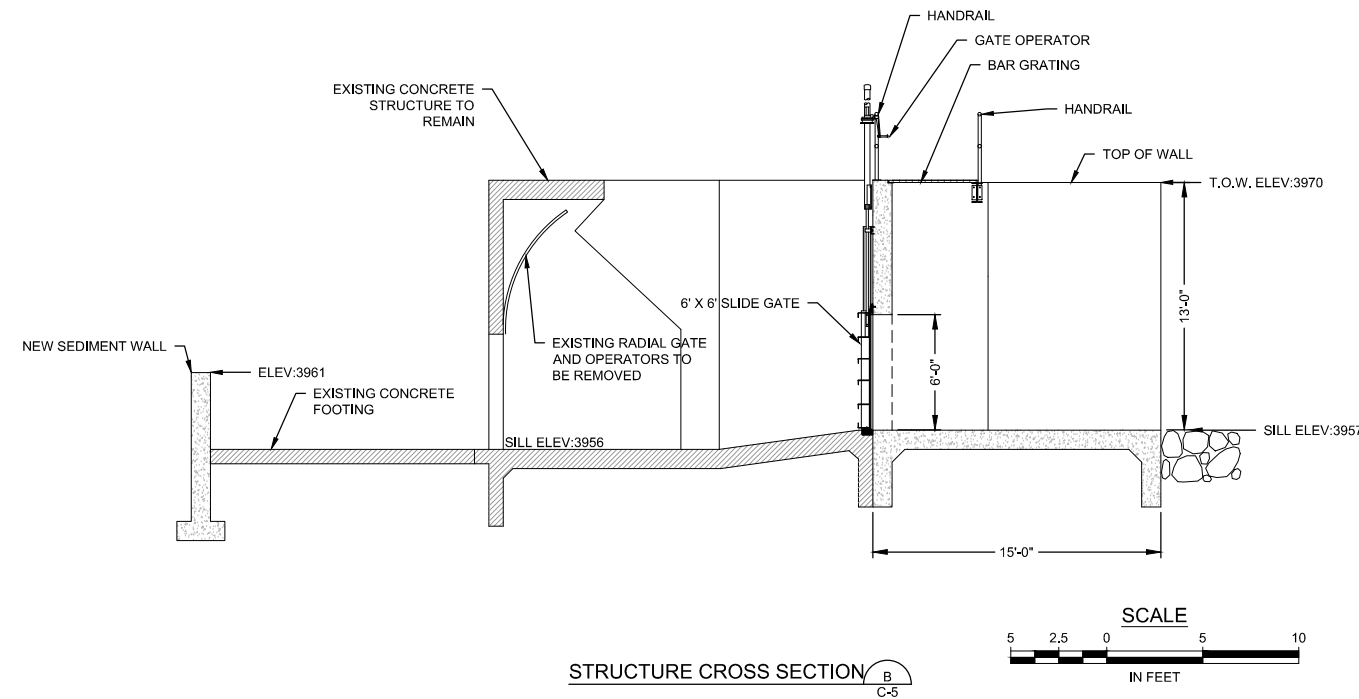
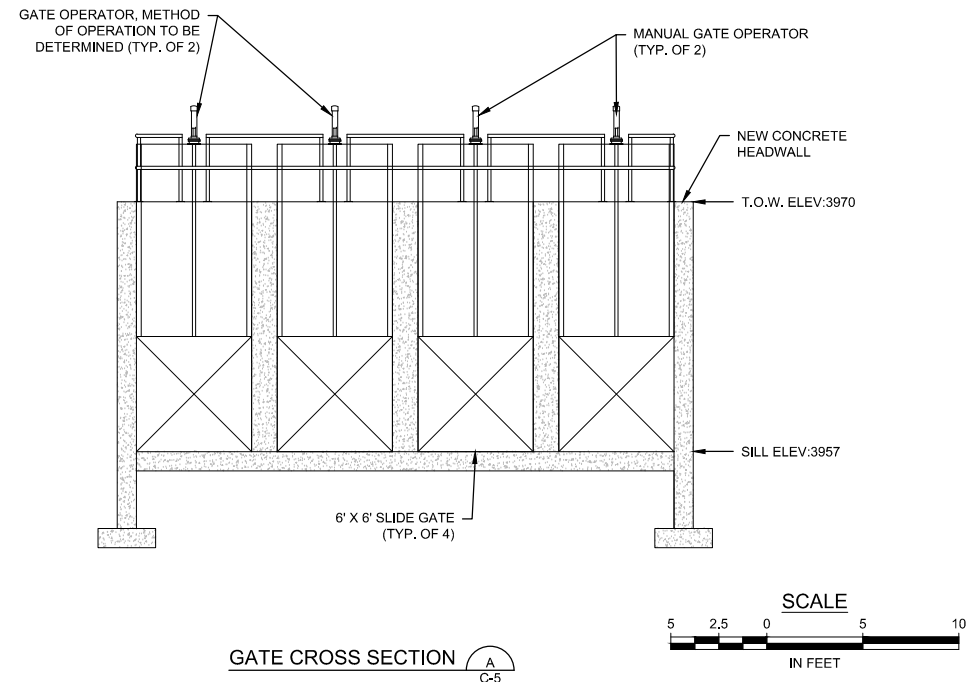
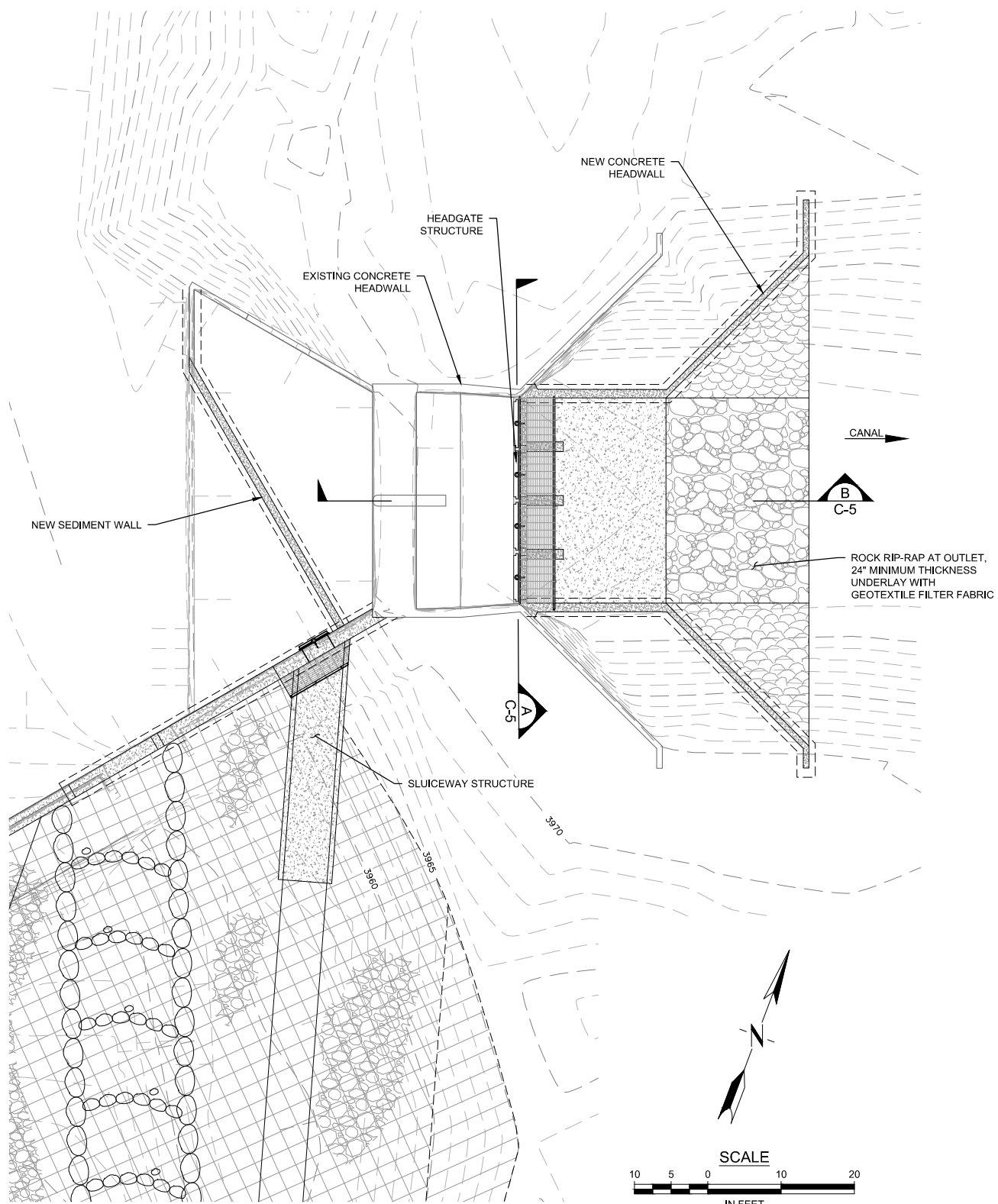
WHEATLAND COUNTY

DEADMAN'S BASIN DIVERSION DAM

DIVERSION DAM DETAILS AND SECTIONS

MONTANA

PROJECT NUMBER 1447.035
SHEET NUMBER 4
DRAWING NUMBER C-4



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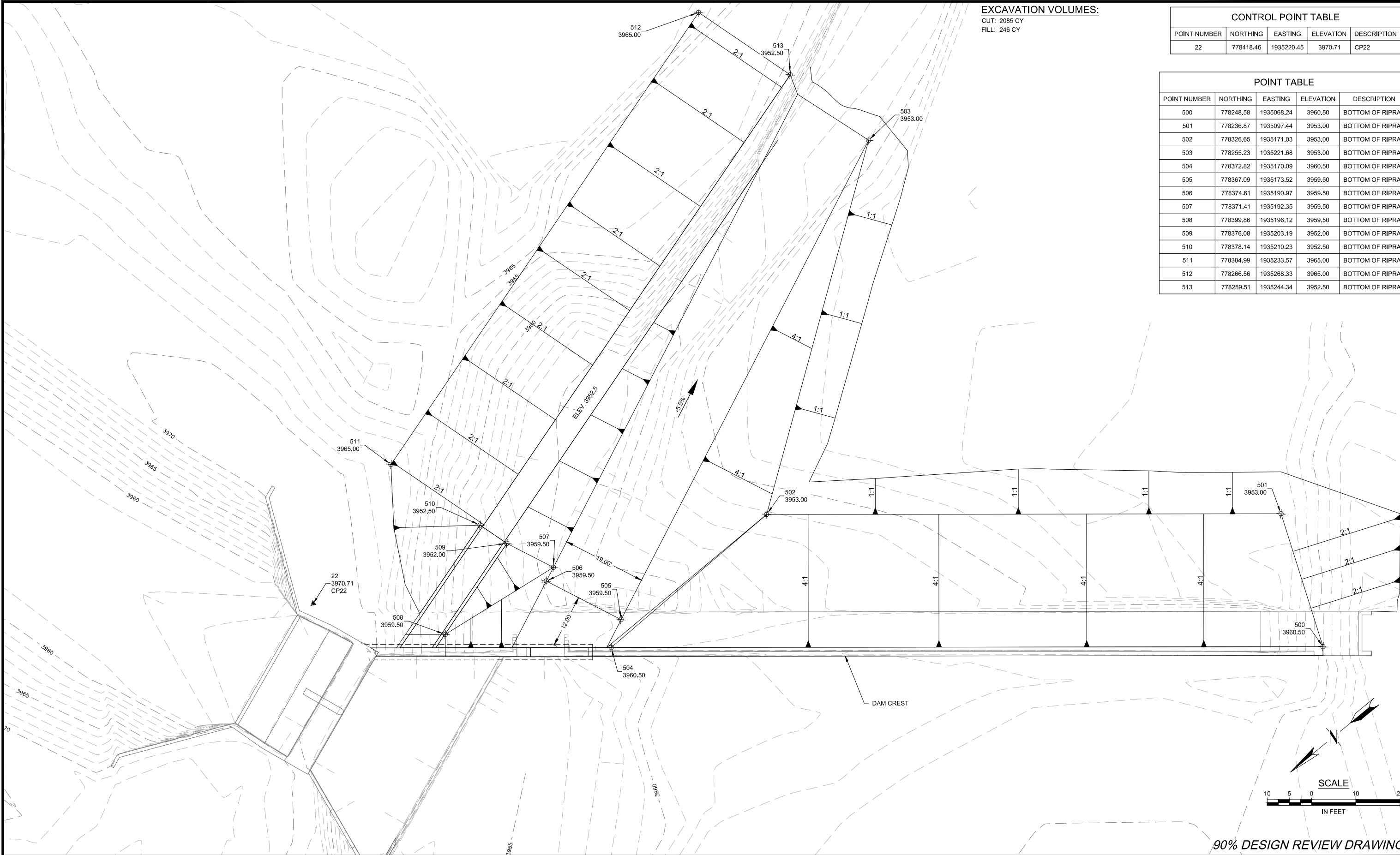
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DEADMAN'S BASIN DIVERSION DAM
WHEATLAND COUNTY MONTANA
HEADGATE PLAN AND SECTIONS

PROJECT NUMBER
1447.035
SHEET NUMBER
5
DRAWING NUMBER
C-5

M:\1447\035\ACAD\SHETS\HEADGATE PLAN AND SECTIONS.DWG PLOTTED BY:CHRISTOPHER HAWKINS ON May/29/2014



EXCAVATION VOLUMES:

CUT: 2085 CY
FILL: 246 CY

CONTROL POINT TABLE				
POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
22	778418.46	1935220.45	3970.71	CP22

POINT TABLE				
POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
500	778248.58	1935068.24	3960.50	BOTTOM OF RIPRAP
501	778236.87	1935097.44	3953.00	BOTTOM OF RIPRAP
502	778326.65	1935171.03	3953.00	BOTTOM OF RIPRAP
503	778255.23	1935221.68	3953.00	BOTTOM OF RIPRAP
504	778372.82	1935170.09	3960.50	BOTTOM OF RIPRAP
505	778367.09	1935173.52	3959.50	BOTTOM OF RIPRAP
506	778374.61	1935190.97	3959.50	BOTTOM OF RIPRAP
507	778371.41	1935192.35	3959.50	BOTTOM OF RIPRAP
508	778399.86	1935196.12	3959.50	BOTTOM OF RIPRAP
509	778376.08	1935203.19	3952.00	BOTTOM OF RIPRAP
510	778378.14	1935210.23	3952.50	BOTTOM OF RIPRAP
511	778384.99	1935233.57	3965.00	BOTTOM OF RIPRAP
512	778266.56	1935268.33	3965.00	BOTTOM OF RIPRAP
513	778259.51	1935244.34	3952.50	BOTTOM OF RIPRAP

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WHEATLAND COUNTY	DEADMAN'S BASIN DIVERSION DAM	PROJECT NUMBER 1447.035
	MONTANA	SHEET NUMBER 6
SUBGRADE GRADING PLAN		DRAWING NUMBER C-6

GENERAL STRUCTURAL NOTES:

DESIGN CODES AND STANDARDS:

- 1. 2009 INTERNATIONAL BUILDING CODE (IBC)
- 2. ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- 3. ACI 318-08 BUILDING CODE REQUIREMENTS FOR CONCRETE STRUCTURES
- 4. AMERICAN WELDING SOCIETY (AWS) D1.1-04 "STRUCTURAL WELDING CODE"

DESIGN LOADS:

- 1. DEAD LOADS: CONCRETE = 150 PCF
- 2. LIVE LOADS/WATER = 62.4 pcf
- 3. WIND LOADS: BASIC WIND SPEED (3-SECOND GUST) = 90 MPH
WIND IMPORTANCE FACTOR = 1.0
WIND EXPOSURE = C
- 4. SEISMIC LOADS: SEISMIC DESIGN CATEGORY = B
- OCCUPANCY CATEGORY = I
- MAPPED ACCELERATION PARAMETER: Ss = 0.301, S1 = 0.101
- SOIL SITE CLASS = C
- DESIGN SPECTRAL ACCELERATION PARAMETER, Sps = 0.241, Sd1 = 0.114
- 5. EARTH PRESSURES:
ABOVE GROUND WATER
LATERAL ACTIVE EARTH PRESSURE (EQUIV. FLUID WT.) = 36PCF

BELOW GROUND WATER
LATERAL ACTIVE EARTH PRESSURE (EQUIV. FLUID WT.) = 82 PCF

FRICTION COEFFICIENT BETWEEN FOOTING BASE AND SUPPORTING SOIL = 0.5

LATERAL EARTH BEARING RESISTANCE (PASSIVE) = 300 PSF/FT.

MISCELLANEOUS:

- 1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH SITE CIVIL FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO BIDDING AND CONSTRUCTION.
- 2. SEE CIVIL DRAWINGS FOR NON-STRUCTURAL ELEMENTS. STRUCTURAL DRAWINGS SHOW THIS INFORMATION FOR COORDINATION PURPOSES ONLY.
- 3. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER.
- 4. ENGINEER SHALL REVIEW SHOP DRAWINGS ONLY FOR THE CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND FOR COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. DIMENSIONS AND QUANTITIES NOTED ON THE SHOP DRAWINGS ARE NOT GUARANTEED BY THE ENGINEER, AND THEREFORE, MUST BE VERIFIED BY THE GENERAL CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR INFORMATION THAT PERTAINS TO THE FABRICATION PROCESSES OR TO TECHNIQUES OF CONSTRUCTION, AND FOR COORDINATION OF THE WORK OF ALL TRADES. SHOP DRAWINGS MUST BE REVIEWED, STAMPED, AND SIGNED BY THE CONTRACTORPRIOR TO THE REVIEW BY THE ENGINEER.
- 5. THE STRUCTURE SHALL BE ADEQUATELY BRACED FOR SOIL, WIND, EARTHQUAKE AND CONSTRUCTION LOADS UNTIL ALL FLOOR, ROOF, AND WALL UNITS HAVE BEEN PERMANENTLY ATTACHED THERETO.

REQUIRED SPECIAL INSPECTIONS AND TESTING:

- 1. IN ADDITION TO REGULAR INSPECTIONS, THE FOLLOWING ITEMS WILL ALSO REQUIRE SPECIAL INSPECTIONS AND TESTING IN ACCORDANCE WITH SECTION 1704, 1707, AND 1708 OF THE 2009 INTERNATIONAL BUILDING CODE.
 - a) SPECIAL INSPECTIONS (1704):
 - INSPECTION OF FABRICATORS (1704.2)
 - CONCRETE CONSTRUCTION (1704.4)
 - SOILS (1704.7)
 - b) STRUCTURAL TESTING FOR SEISMIC RESISTANCE (1708):
 - REINFORCING STEEL (1708.3)
- 2. THE CONTRACTOR OR ITS AUTHORIZED AGENT SHALL EMPLOY A QUALIFIED TESTING AGENCY TO PROVIDE INSPECTION AND TESTING OF REQUIRED STRUCTURAL ITEMS IN ACCORDANCE WITH THE STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE STRUCTURAL ENGINEER OF RECORD.
- 3. IN ACCORDANCE WITH SECTION 1706.1 OF THE IBC, THE CONTRACTOR IS REQUIRED TO ACKNOWLEDGE THEIR AWARENESS OF AND THER PLANS FOR OBTAINING CONFORMANCE WITHIN THEIR OWN ORGANIZATION TO THE STATEMENT OF SPECIAL INSPECTIONS. A FORM OUTLINING THE CONTRACTOR'S RESPONSIBILITIES WILL BE PROVIDED BY THE STRUCTURAL ENGINEER OF RECORD FOR THE CONTRACTOR'S USE IN MEETING THE REQUIREMENTS OF IBC SECTION 1706.1.

EARTHWORK:

- 1. FOUNDATIONS HAVE BEEN BASED ON AN ALLOWABLE BEARING PRESSURE PER IBC TABLE 1804.2. ALLOWABLE SOIL BEARING CAPACITY OF WALL FOOTINGS SUPPORTED ON NATIVE SOIL MATERIAL WITH 1'-0" OF STRUCTURAL FILL IS 3000 PSF.
- 2. ALLOWABLE SOIL BEARING CAPACITY OF SPREAD FOOTINGS SUPPORTED ON NATIVE COLLUVIUM, ALLUVIUM, BEDROCK, OR PLACED AND COMPACTED STRUCTURAL FILL IS 3000 PSF.
- 3. DATA ON INDICATED SUBSURFACE CONDITIONS ARE NOT INTENDED AS REPRESENTATIONS OR WARRANTIES OF CONTINUITY OF SUCH CONDITIONS. IT IS EXPRESSLY UNDERSTOOD THAT OWNER AND ENGINEER WILL NOT BE RESPONSIBLE FOR INTERPRETATIONS OR CONCLUSIONS DRAWN THEREFROM BY THE CONTRACTOR. THE DATA ARE MADE AVAILABLE FOR CONVENIENCE OF THE CONTRACTOR.
- 4. STABILITY OF CONSTRUCTION EXCAVATION AND WORKER SAFETY ARE THE RESPONSIBILITY OF THE CONTRACTOR. TEMPORARY CONSTRUCTION EXCAVATIONS, ABOVE GROUNDWATER, TO BE PLANNED IN ACCORDANCE WITH OSHA PROVISIONS SHOULD ASSUME TYPE B MATERIAL FOR STIFF CLAY, AND TYPE C MATERIAL FOR SAND.
- 5. GROUNDWATER MAY BE PRESENT DURING CONSTRUCTION. THE CONTRACTOR IS

- RESPONSIBLE FOR ANY AND ALL DEWATERING.
- 6. KEEP EXCAVATIONS FREE OF STANDING WATER. REMOVE AND REPLACE MATERIAL THAT IS NOT WITHIN 3% OF OPTIMUM MOISTURE PRIOR TO PLACING ADDITIONAL FILL OR CONCRETE.
- 7. PROPER DRAINAGE SHALL BE MAINTAINED DURING CONSTRUCTION TO KEEP SURFACE RUNOFF FROM ENTERING THE EXCAVATIONS AND DIRECTED AWAY FROM THE STRUCTURE.
- 8. ALL EXCAVATION IS UNCLASSIFIED, REGARDLESS OF THE MATERIAL ENCOUNTERED.
- 9. SUB-EXCAVATE ALL EXISTING FILL TO BOTTOM OF FOOTING OR SLAB ELEVATION AS INDICATED IN THE DRAWINGS. ONCE EXCAVATION HAS REACHED BOTTOM OF FOOTING OR SLAB ELEVATION SUB-EXCAVATE ADDITIONAL 1'-0" AND REPLACE WITH STRUCTURAL FILL TO BOTTOM OF FOOTING OR BOTTOM OF SLAB ELEVATION AS INDICATED IN DRAWINGS. OVER-EXCAVATE ½ FOOT IN THE HORIZONTAL DIRECTION FOR EVERY VERTICAL FOOT EXCAVATED BELOW BOTTOM OF SLAB OR FOOTING.
- 10. STRUCTURAL FILL AND BACKFILL MATERIAL SHALL BE IMPORTED CLEAN SANDY GRAVEL MEETING THE GRADATION REQUIREMENTS: 100 PERCENT PASSING 3", 28-60 PERCENT PASSING THE #4 SIEVE, AND 5 PERCENT (MAX.) PASSING THE #200 SIEVE.
- 11. STRUCTURAL FILL AND BACKFILL SHALL BE PLACED IN MAXIMUM LOOSE LIFTS OF 8" AND COMPACTED TO 95% OF ASTM D698.
- 12. USE ONLY HAND OPERATED COMPACTION EQUIPMENT WITHIN 5 FT. OF STRUCTURES.
- 13. DO NOT PLACE BACKFILL UNTIL ALL SUPPORTING STRUCTURES ARE IN PLACE AND CONCRETE WALLS AND SLABS HAVE ACHIEVED THE SPECIFIED 28-DAY COMPRESSIVE STRENGTH UNLESS OTHERWISE NOTED ON DRAWINGS.
- 14. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

CONCRETE:

- 1. CONCRETE PROPERTIES (SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS):

CAST-IN-PLACE CONCRETE	FOOTINGS/ FOUNDATION WALLS
MINIMUM 28 DAY COMPRESSIVE STRENGTH	4000 PSI
MAXIMUM WATER- CEMENT RATIO (BY WT.)	0.43
MAXIMUM AGGREGATE SIZE	¾"
PERCENT RANGE OF AIR CONTENT	6.5% ± 1.5%**
MAXIMUM SLUMP	4" ***

- *** MAXIMUM SLUMP MAY BE INCREASED TO 8" W/ THE USE OF WATER-REDUCING ADMIXTURES TO MAINTAIN THE SPECIFIED W/C RATIO.
- 2. ALL CONCRETE REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60, EXCEPT FOR REINFORCING INDICATED AS REQUIRING WELDING, WHICH SHALL CONFORM TO ASTM A706, GR.60.
- 3. CLEARANCE FOR REINFORCEMENT BARS, UNLESS SHOWN OTHERWISE, SHALL BE:
WHEN PLACED ON GROUND: --- 3" INTERIOR DRY SURFACES:
EXPOSED TO WATER, WEATHER, SLABS ----- 3/4"
BACKFILL OR CONDENSATION: BEAMS ----- 1-1/2"
#5 BAR OR SMALLER -----2" COLUMNS --- 1-1/2"
#6 BAR OR LARGER -----2" WALLS ----- 1"
- 4. ALL BENDS, UNLESS OTHERWISE SHOWN, SHALL BE A 90 DEGREE STANDARD HOOK AS DEFNED IN THE LATEST EDITION OF ACI 318. DETAIL ALL REINFORCEMENT IN ACCORDANCE WITH ACI 315.
- 5. ALL REINFORCEMENT LAPS, UNLESS OTHERWISE NOTED, SHALL BE AS FOLLOWS:

DETAIL OF REINFORCEMENT - LAP LENGTHS **										
BAR SIZE	#3	#4	#5	#6	#7	#8	#9	#10	#11	
CONCRETE DESIGN STRENGTH	4000 PSI									
GR 60	TOP BAR *	1'-9"	2'-5"	3'-0"	3'-7"	5'-3"	6'-0"	6'-9"	7'-7"	8'-6"
	OTHER BAR	1'-5"	1'-8"	2'-4"	2'-6"	4'-0"	4'-7"	5'-2"	5'-10"	6'-7"

- * TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR, IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.
- ** INCREASE LAP LENGTHS SHOWN ABOVE BY 25% WHERE BARS ARE SPACED CLOSER THAN 6" O.C., OR WHERE EDGE OF BAR MEASURED IN DIRECTION OF SPACING IS LESS THAN 3" FROM FACE OF MEMBER.
- 6. TOLERANCES IN PLACING REINFORCEMENT SHALL BE: +/- 3/8 IN. FOR MEMBERS WITH D LESS THAN 8 IN. +/- 1/2 IN. FOR MEMBERS WITH D GREATER THAN 8 IN. WHERE D IS THE DISTANCE FROM THE OPPOSITE FACE OF CONCRETE TO THE CENTER OF THE REINFORCING.
- 7. METAL CLIPS OR SUPPORTS SHALL NOT BE PLACED IN CONTACT WITH THE FORMS OR THE SUBGRADE. CONCRETE BLOCKS OR DOBBIES SUPPORTING BARS ON SUBGRADE SHALL BE IN SUFFICIENT NUMBERS TO SUPPORT THE BARS WITHOUT SETTLEMENT, BUT IN NO CASE SHALL SUCH SUPPORT BE CONTINUOUS.
- 8. DOWELS SHALL BE THE LENGTH INDICATED. DOWELS SHALL BE WIRED IN POSITION PRIOR TO POURING CONCRETE.
- 9. AT ALL FOUNDATION/CONCRETE WALL AND FOOTING CORNERS AND WALL INTERSECTIONS, CORNER BARS SHALL BE PROVIDED TO MATCH THE HORIZONTAL BARS. SEE FOUNDATION DETAILS(1/S-4 & 2/S-4)

- 10. UNLESS INDICATED OTHERWISE, ALL ANCHOR BOLTS, HOLDOWNS AND OTHER REQUIRED ACCESSORIES SHALL BE WIRED IN PLACE PRIOR TO FOUNDATION INSPECTION AND CONCRETE PLACEMENT. DO NOT STAB THE ABOVE LISTED ITEMS INTO FRESH CONCRETE AFTER PLACEMENT. PROPERLY VIBRATE AROUND INSTALLED ITEMS TO ENSURE PROPER CONSOLIDATION OF CONCRETE.
- 11. WHERE SLAB OR WALL CONSTRUCTION REQUIRES CONSTRUCTION JOINTS PROVIDE A ROUGHENED BONDED SURFACE WITH LAPPED REINFORCEMENT AS INDICATED IN DETAIL 3/S-4.
- 12. PROVIDE VERTICAL CONSTRUCTION JOINT AT END OF POUR PER DETAIL 6/S-4. LENGTH OF WALL POUR SHALL BE 60'-0" OR LESS BETWEEN CONSTRUCTION JOINTS.
- 13. WHERE "DRILLING & EPOXYING" OF REINFORCING STEEL OR THREADED ANCHOR RODS (ASTM A36, U.N.O.) IS INDICATED, UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING SYSTEM OR APPROVED EQUIVALENT:
APPLICATION EPOXY SYSTEM
NEW OR EXISTING CONCRETE, HILTI HIT HY200
- 14. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

STRUCTURAL ABBREVIATIONS

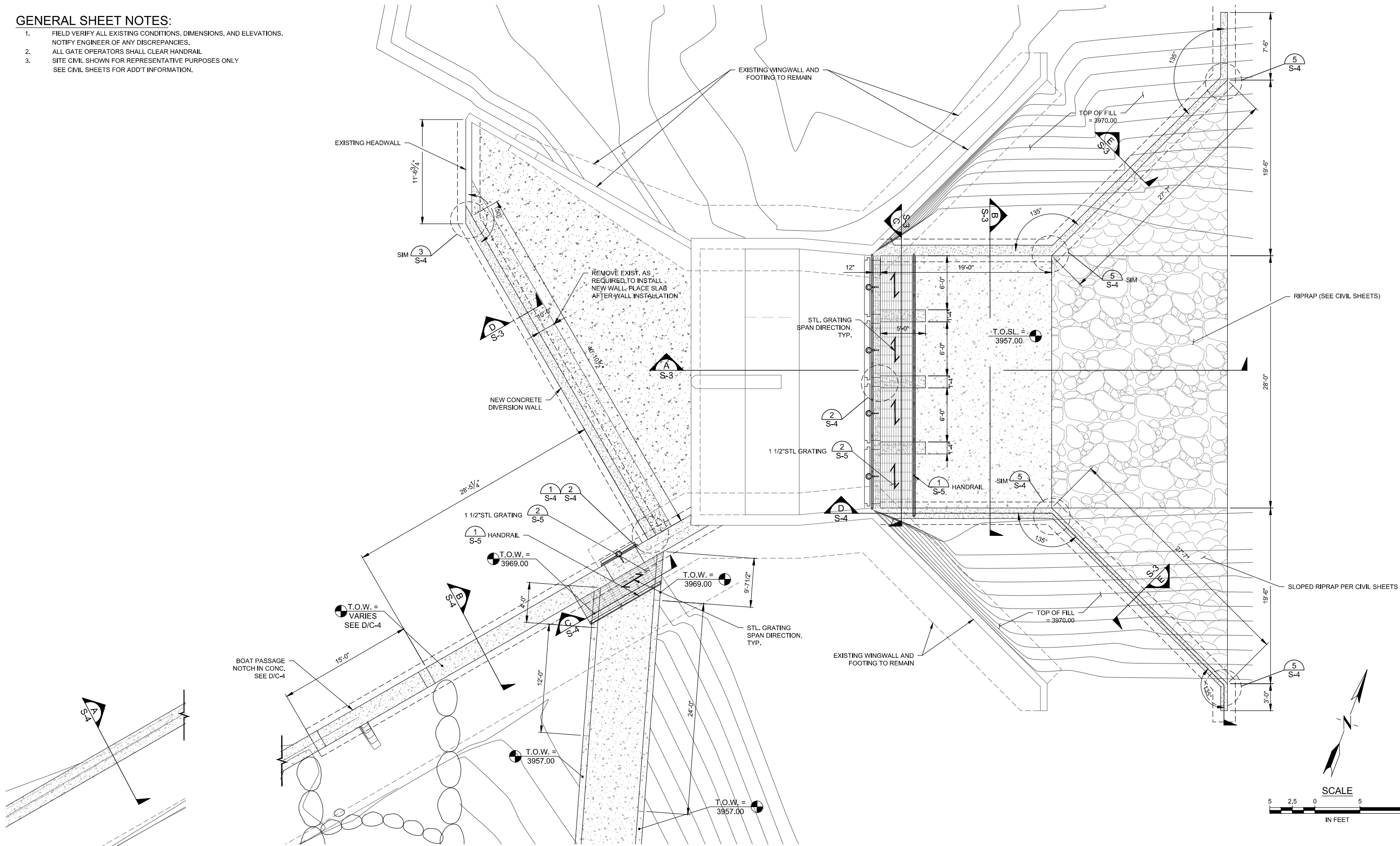
ABUT. A.C.I. A.F.F. A.I.S.C.	- ABUTMENT - AMERICAN CONCRETE INSTITUTE - ABOVE FINISHED FLOOR - AMERICAN INSTITUTE OF STEEL CONSTRUCTION	MK. M.O. MTD. MTL.	- MARK - MASONRY OPENING - MOUNTED - METAL
A.N.S.I.	- AMERICAN NATIONAL STANDARDS INSTITUTE	N.	- NORTH
A.W.S.	- AMERICAN WELDING SOCIETY	OPP. O.W.J.	- OPPOSITE - OPEN WEB JOIST
B.B. BLKG. BSMT. B.U.	- BACK TO BACK - BLOCKING - BASEMENT - BUILT-UP	P.A.F. PCS. PSF PSI P.T.	- POWDER ACTUATED FASTENERS - PIECES - POUNDS PER SQ. FT - POUNDS PER SQ. INCH - PRESSURE TREATED
CCJ CEJ CRJ CJ CH,FL,PL. CTRD.	- CONCRETE CONTROL JOINT - CONCRETE EXPANSION JOINT - CONCRETE CONSTRUCTION JOINT - CONCRETE ISOLATION JOINT - CHECKERED FLOOR PLATE - CENTERED	R. RD. RM.	- RISER - ROUND - ROOM
° DWL D.O.	- DEGREE - DOWEL - DOOR OPENING	S. S.F. SFC. S.G.T. SHT'G. S.I.	- SOUTH - SQUARE FEET - SURFACE - STRUCTURAL GLAZED TILE - SHEATHING - SQUARE INCHES
E.	- EAST	S.I.P. S.L.V. SPA. SST STIRR. STR. S.Y.	- STRUCTURAL INSULATED PANEL - SHORT LEG VERTICAL - SPACES - STAINLESS STEEL - STIRRUP - STRAIGHT - SQUARE YARD
GL. G.L.B. GR. G.W.	- GLUE LAMINATED - GLUE LAMINATED BEAM - GRADE - GROUND WATER	T. THD. TJI TMBR. T.O.D. T.O.F. T.O.SL. T.O.W.	- TREAD OR TON - THREAD - TRUSS JOIST - TIMBER - TOP OF DECK/SHEATHING - TOP OF FOOTING - TOP OF SLAB - TOP OF WALL
H.C.M.	- HOLLOW CLAY MASONRY	U.N.O.	- UNLESS NOTED OTHERWISE
I.B.C. I.C.B.O.	- INTERNATIONAL BUILDING CODE - INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS	W W.I W.P.	- WEST - WROUGHT IRON - WORKING POINT
INV.	- INVERT		
KIP	- 1000 POUNDS		
LAM. L.L.V. L.L.H. L.V.L.	- LAMINATED - LONG LEG VERTICAL - LONG LEG HORIZONTAL - LAMINATED VENEER LUMBER		

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	NO.	DESCRIPTION	DATE	BY					WHEATLAND COUNTY	MONTANA	SHEET NUMBER 7
									STRUCTURAL NOTES		DRAWING NUMBER S-1

GENERAL SHEET NOTES:

1. FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS. NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL GATE OPERATORS SHALL CLEAR HANDRAIL.
3. SITE CIVIL SHOWN FOR REPRESENTATIVE PURPOSES ONLY. SEE CIVIL SHEETS FOR ADD'T INFORMATION.



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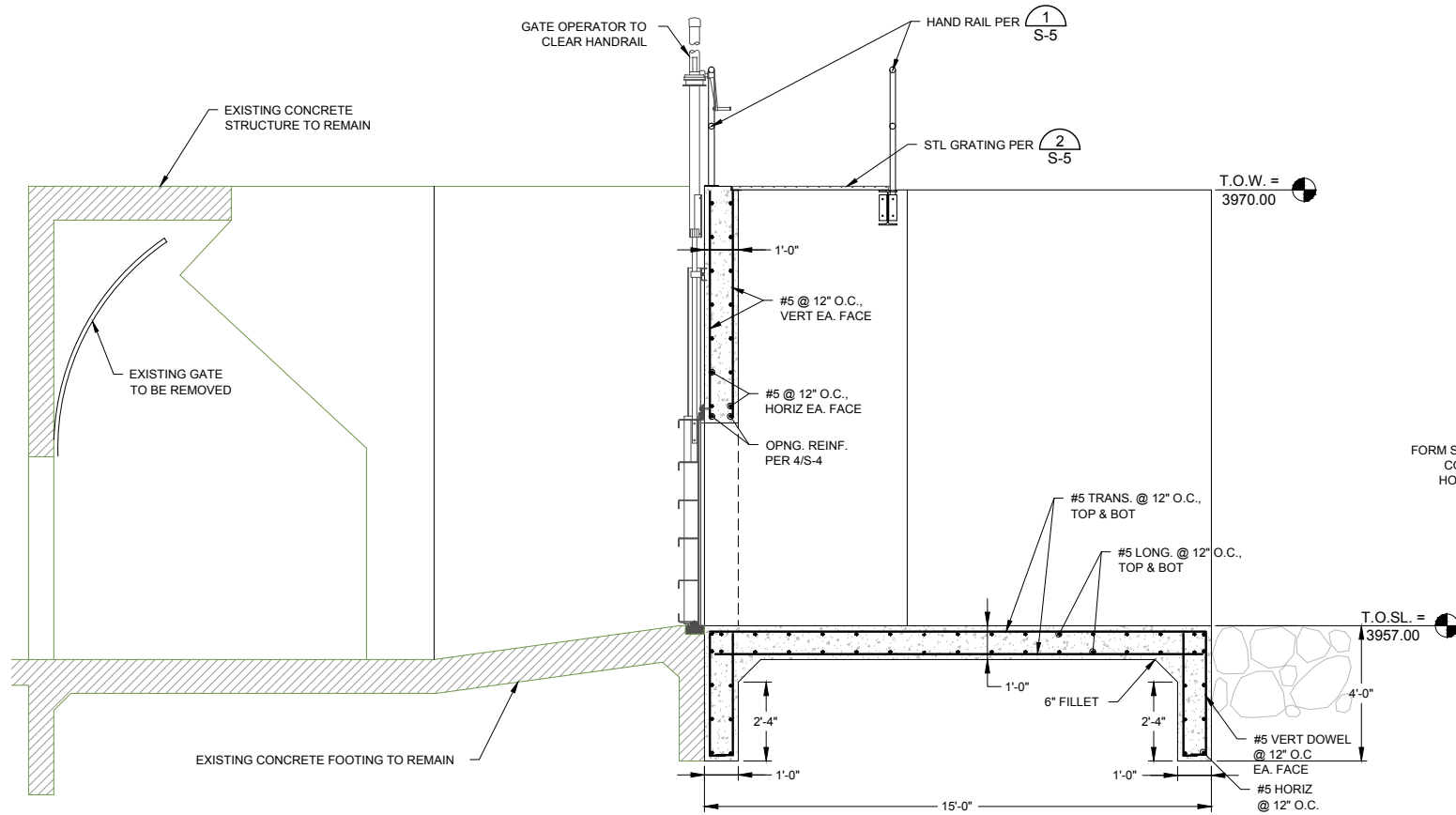
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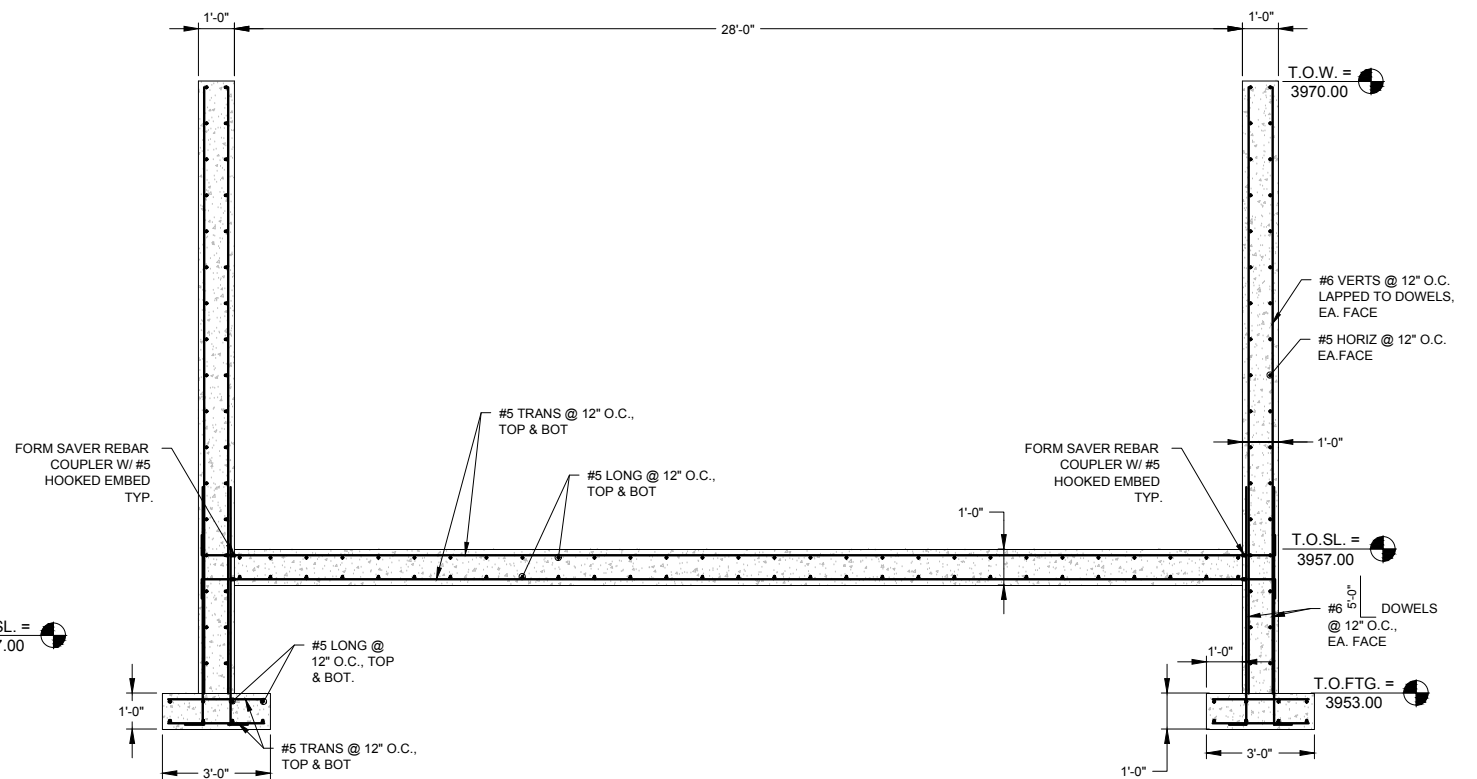
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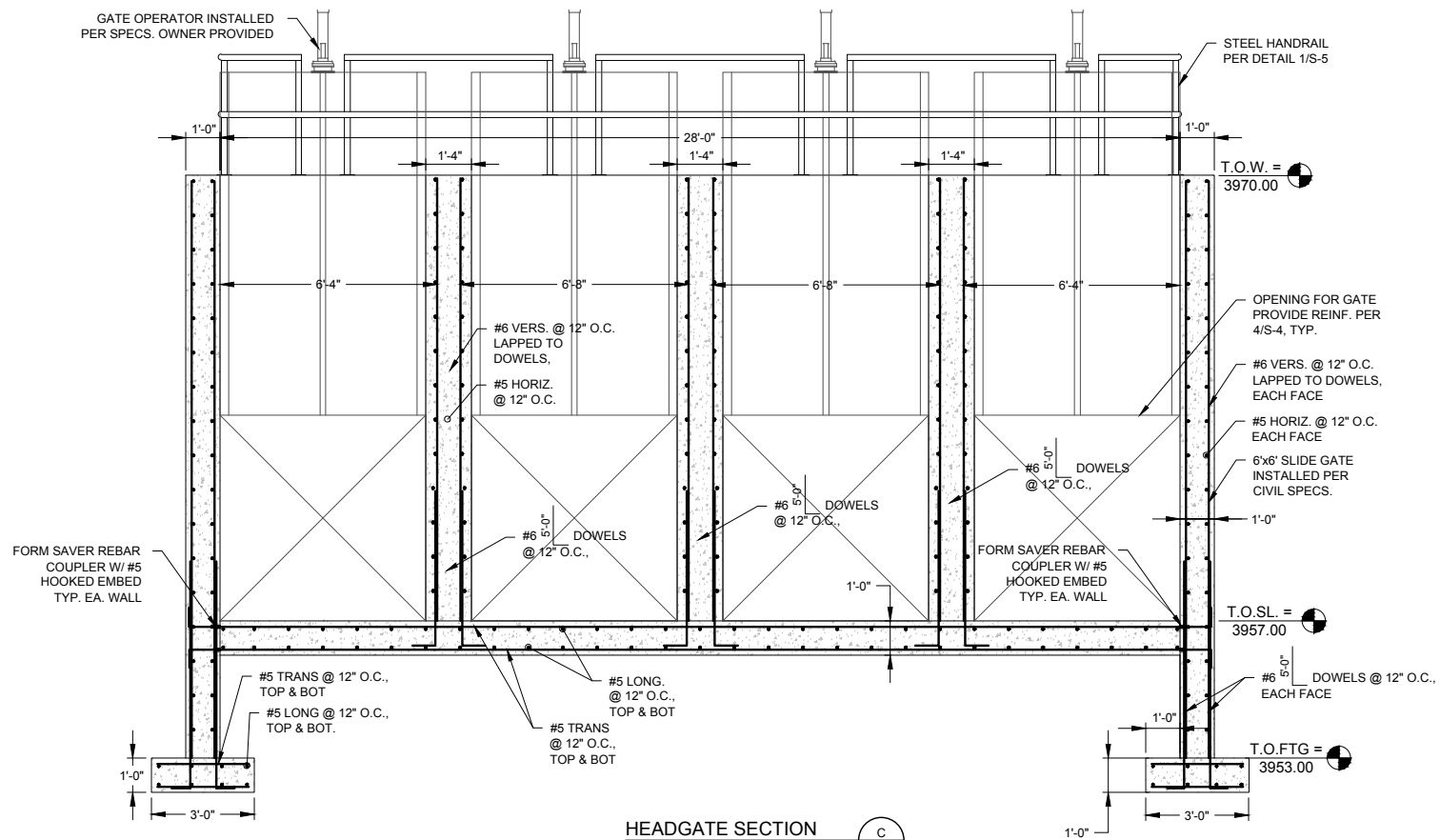
DEADMAN'S BASIN DIVERSION DAM		
WHEATLAND COUNTY	STRUCTURAL PLAN	MONTANA
PROJECT NUMBER 1447.035		SHEET NUMBER 8
DRAWING NUMBER S-2		



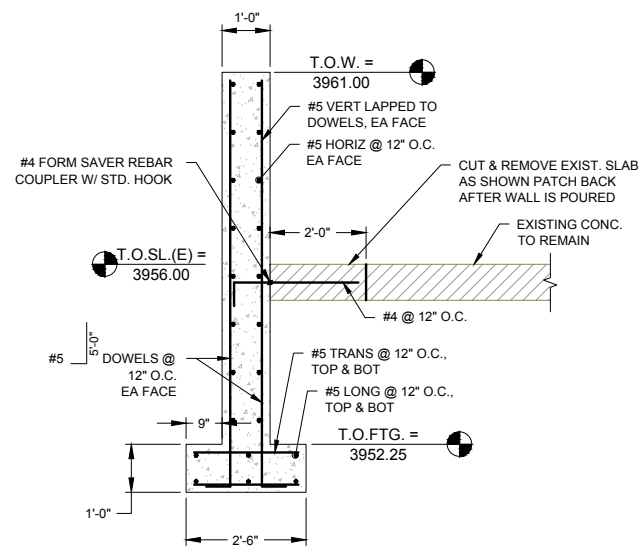
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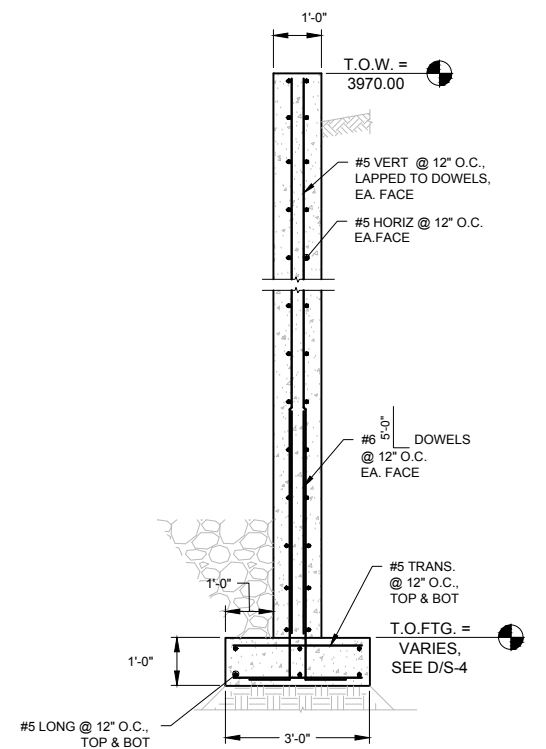
HEADGATE SECTION
SCALE: 3/8" = 1'-0"



HEADGATE SECTION
SCALE: 3/8" = 1'-0"



OVER SECTION
SCALE: 1/2" = 1'-0"



WING WALL SECTION
SCALE: 1/2" = 1'-0"

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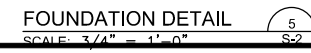
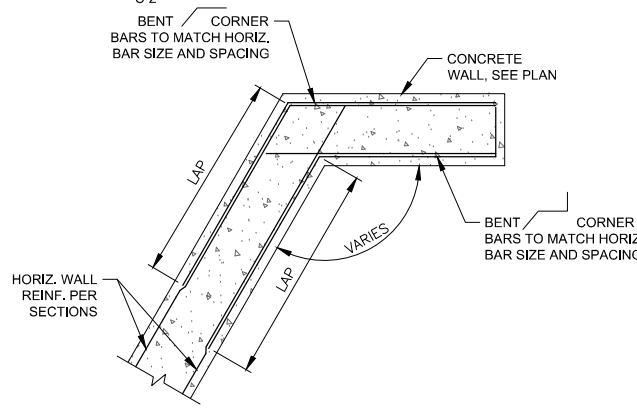
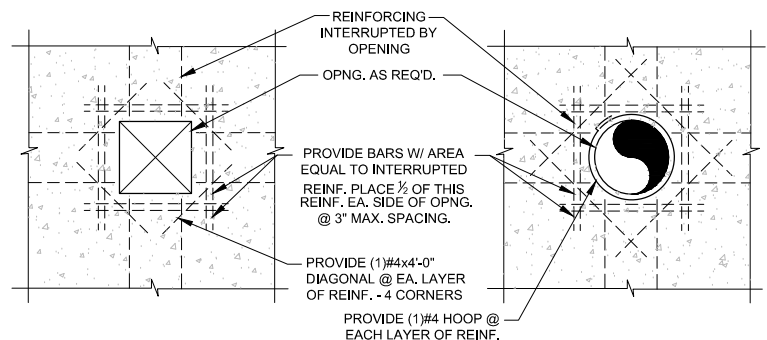
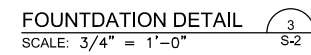
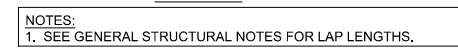
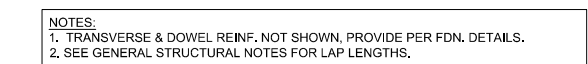
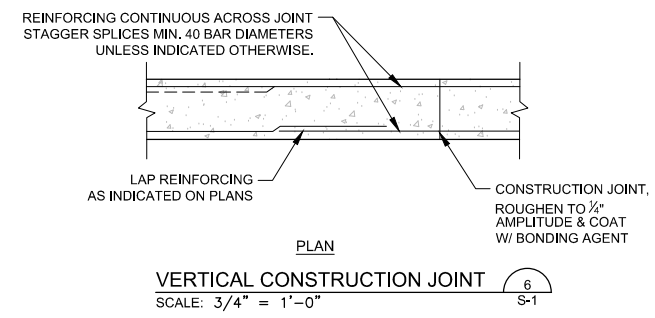
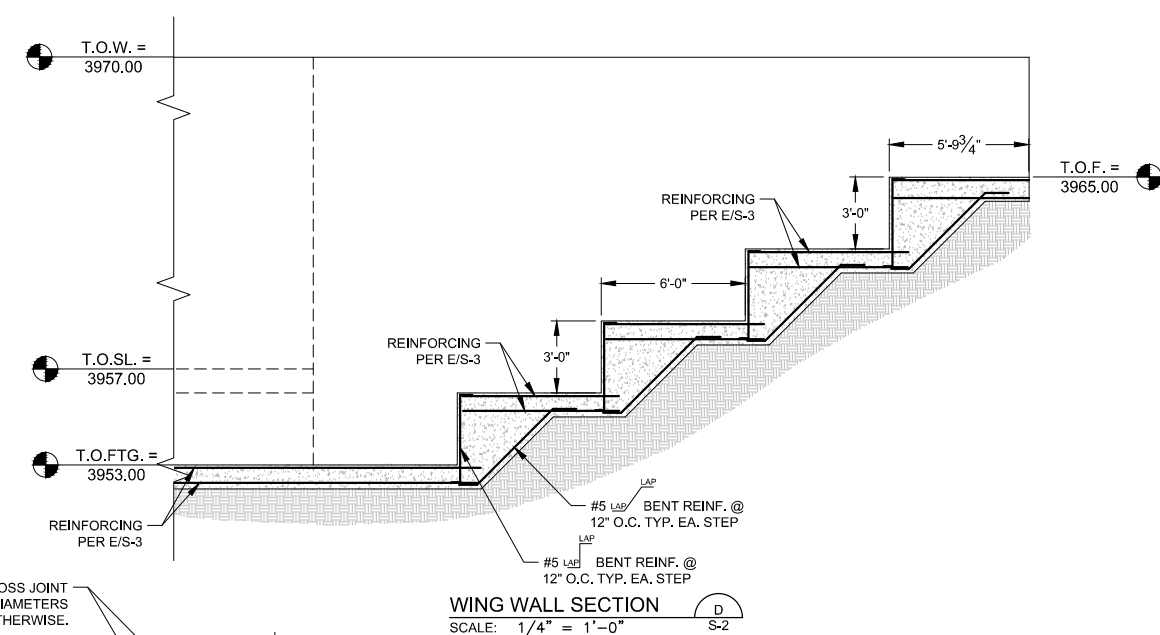
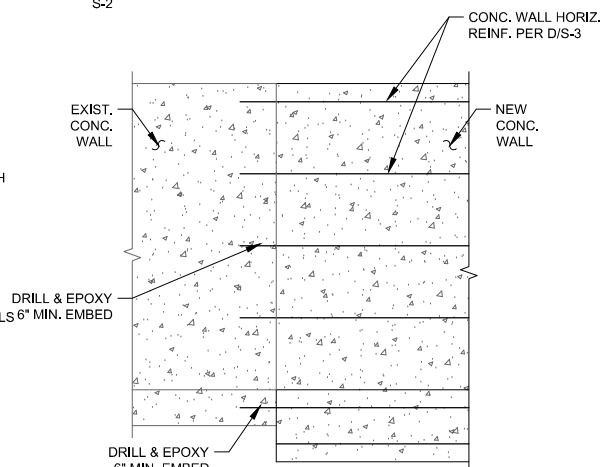
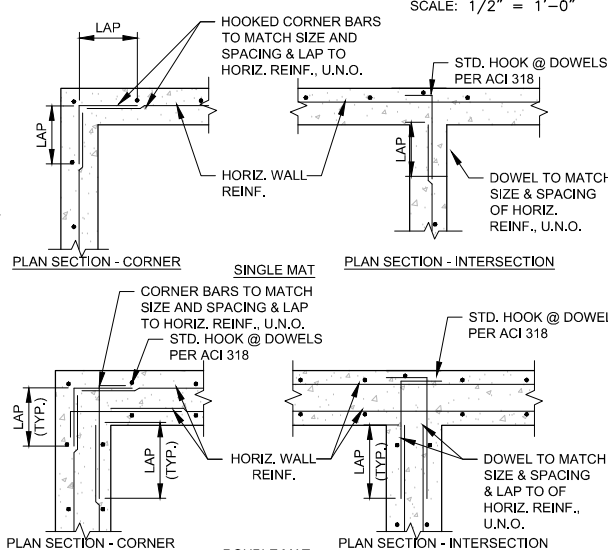
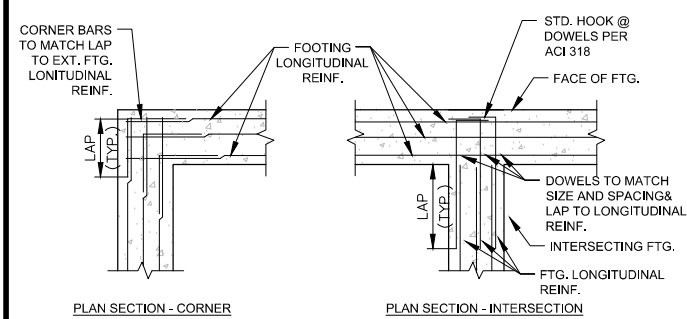
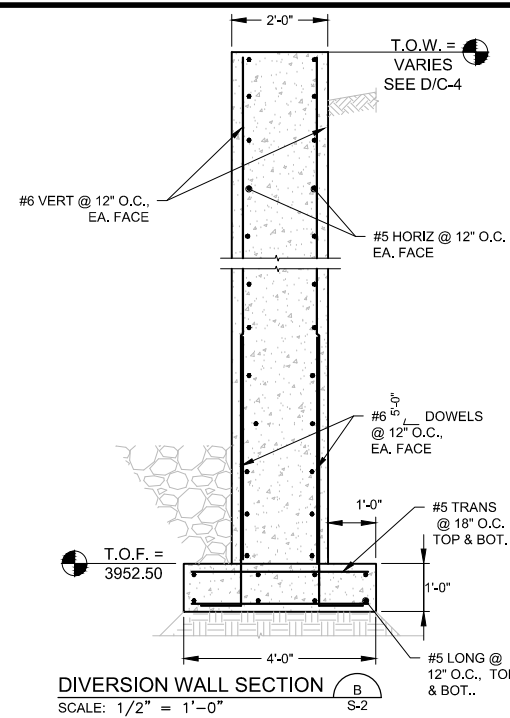
WHEATLAND COUNTY

DEADMAN'S BASIN DIVERSION DAM

MONTANA

STRUCTURAL SECTIONS

PROJECT NUMBER
1447.035
SHEET NUMBER
9
DRAWING NUMBER
S-3



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DEADMAN'S BASIN DIVERSION DAM		
WHEATLAND COUNTY		MONTANA
STRUCTURAL SECTIONS AND DETAILS		

PROJECT NUMBER 1447.035
SHEET NUMBER 10
DRAWING NUMBER S-4

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